



Australian Bureau of Statistics

CensusAtSchool Australia



Education Services home page > CensusAtSchool home page > Year 10 Resources

Resources



CaSQ 1B - Mean and Standard Deviation of Belly Button Heights

You can download this activity as a rich text file (RTF) using the link at the bottom of the page.

How to: Get a Random Sample from CensusAtSchool

Go to the CensusAtSchool Random Sampler and get a sample.

Reference year: *Select year* **Sample size:** *at least 30 students*

Select questions: *Belly button height*

Location: *Select location* **Year level:** *Select your year level*

To protect privacy there is a rule built into the sampler that the requested sample size cannot exceed 10% of the respondents for the parameters entered.

Task:

1. In your CensusAtSchool random sample, find the question about belly button height.

Outliers can be the result of an error or an unusual value. All outliers need to be investigated to see whether they are errors or true outliers. If they are errors, we remove them. We can often identify possible outliers by eye as they are different to the rest of the data set. In this case, we will consider numbers outside the range of 80 – 110cm to be outliers.

In your CensusAtSchool random sample, find the question about belly button height, and enter ten numbers as a list in your CAS calculator. If you find an outlier or a blank, go to

the next value in your list.

2. Calculate the mean _____

3. Calculate the standard deviation _____

4. You are told that the mean belly button height of a sample is 96 cm, and a standard deviation of 11. Create a realistic sample of ten belly button heights below that will give you a mean of 96cm, and a standard deviation of 11, accurate to the nearest whole number.

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5. Get your neighbour to check your data sample of ten. *“This data sample of ten has a mean of 96cm and a standard deviation of 11.”* signed:

Extension:

6. Explain in words how you went about creating a sample of ten numbers that had a mean of 96cm, and a standard deviation of 11.

Download the full activity:

RTF

[Back to top](#)

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